enterasys® Secure Networks™

DATASHEET

N-Series Gold DFE

Convergence-ready, 10GE Modular L2/L3/L4 Switch for Edge-to-Core and Data Center

High-density, cost effective 10/100, 10/100/1000, 100FX and PoE modules

Optimized for enterprise edge network deployments

Multiple authentication techniques enable identity-aware networking

Enables simplified network design to reduce maintenance & service costs

Backplane architecture provides a total of 1.68 Terabits per second of switching capacity

Product Overview

Optimized for the network edge, the Gold Distributed Forwarding Engine (DFE) modules for the Enterasys N-Series are designed specifically for high-density 10/100, 10/100/1000, and 100FX network edge applications. These DFEs provide a very cost-effective and flexible option for customers deploying switching at the edge of the network.

Gold DFEs deliver scalable performance and flexibility to ensure comprehensive switching, routing, Quality of Service (QoS), security, and traffic containment unmatched by competitive solutions.

Gold DFEs are supported in the N1, N3, N5, and N7 platforms for guaranteed investment protection across the entire series. Through a flexible, optional license upgrade, these modules support 1+1 redundancy and advanced routing for mission-critical network applications.

Module Configurations

The Gold DFEs provide flexibility with a variety of port-density and technology options for the edge:

- Up to 48 ports of 100Base-FX via MT-RJ
- Up to 72 ports of 10/100Base-TX via RJ45
- Up to 48 ports of PoE 10/100Base-TX via RJ45
- Up to 72 ports of 10/100Base-TX via RJ21
- Up to 72 ports of 10/100/1000Base-T via RJ45
- Up to 72 ports of PoE 10/100/1000Base-T via RJ45

All modules can be installed in any N-Series chassis-based solution.

Benefits

Business Alignment

- Open convergence support for voice, video, and data networks enable automatic discovery, classification, and prioritization
- Cost-effective, high-density 10/100, 10/100/1000, and 100FX provide dedicated, scalable edge connectivity
- Choice of high-availability implementations align with enterprise edge network configuration requirements

Operational Efficiency

- Integrated services design reduces the number and type of modules required to build typical wiring closet configurations and simplifies network design
- Common chassis, management, and baseline features simplify network configuration and support
- Multiple chassis footprints enable “pay as you grow” connectivity, lowering entry and support costs

Security

- Static and dynamic policy rules intelligently sense and automatically respond to network security threats
- Multi-user, multi-method authentication on every port supports all device types connecting at the edge of the network
- Firewall-like control on every port in the infrastructure, enabling pervasive network wide perimeter security

Support and Services

- Industry-leading customer satisfaction and first call resolution rates
- Personalized services, including site surveys, network design, installation, and training

There is nothing more important than our customers.

Features

Scalable Edge Connectivity

The Gold DFE dramatically increases the edge density for 10/100 and 10/100/1000 connectivity with the highest module density in the industry. This not only provides extensive scalability, but also optimizes the cost-effectiveness of the N-Series.

Density and Performance

The N-Series provides high performance and high density:

Gold DFE	N1	N3	N5	N7
Performance (Mpps)	6.5 Mpps	19.5 Mpps	32.5 Mpps	45.5 Mpps
Capacity	4.5 Gbps	13.5 Gbps	22.5 Gbps	31.5 Gbps
10/100 Base-TX Ports	72	216	360	504
100 Base-FX Ports	54	162	270	378
10/100/1000 Base-TX Ports	72	216	360	504
10/100/100 Base-TX Ports with PoE	72	216	360	504
1000 Base-X Ports	6	18	30	42

Common Enterasys Switching, Routing, and Management

As part of the N-Series family, Gold DFEs offer a consistent feature set and management functionality. This reduces the implementation and management costs of an end-to-end Enterasys network.

Performance/Capacity

Switching Fabric Bandwidth Capacity
9.0 Gbps per DFE

Switching Throughput
6.5 Mpps (measured in 64-byte packets)

Routing Throughput
6.5 Mpps (measured in 64-byte packets)

Address Table Size
32,768 MAC Addresses

VLANs Supported
4,094

Transmit Queues
4

Classification Rules
6,144/chassis

Memory
Main Memory: 128 MB, expandable to 256 MB
Flash Memory: 32 MB, expandable to 64 MB

Standards and Protocols

Switching/VLAN Services

Generic VLAN Registration Protocol (GVRP)
802.1Q VLANs
802.1D MAC Bridges
802.1w Rapid-Reconvergence of Spanning Tree
802.1s Multiple Spanning Tree
802.3ad Link Aggregation
Broadcast Suppression
802.3x Flow Control
IDS Redirect
IGMP v1/v2
Jumbo Packet with MTU Discovery Support for Gigabit Ethernet Ports
Flow Set-Up Throttling
SPAN Guard

IP Routing

Basic IP Routing Package: Part of Enterasys Operating System (EOS) and included in all Gold DFEs.
Static Routes
RIPv2
RIP Equal Cost Multipath (ECMP)
IGMPv1/IGMPv2
ICMP
Virtual Router Redundancy Protocol (VRRP)
ACL Basic
DHCP Relay
Extended IP Routing Package: A software upgrade (N-EOS-L3) sold on a per-chassis basis.
OSPF with Multipath Support
DVMRP
Extended ACLs
PIM-SM
LS-NAT
Only one license is required per N3, N5, or N7 chassis.

Standards and Protocols (Cont.)

Security (User, Network, and Host)

Telnet (Inbound/Outbound)
Secured Shell (SSHv2) (Switch Host Interface Only)
Syslog
802.1X Port-based Network Access Control (Single User)
Web-based Authentication
MAC-based Authentication
Multiple Authentication types
(802.1X, MAC Address, Web) per Port

Management, Control, and Analysis

SNMP v1/v2c/v3
Web Support
Industry-Standard CLI Support
Single IP Address Management
Support for Multiple, Editable Configuration Files
DHCP Client
RADIUS Client Support with PAP and CHAP
Entity MIB
COM Port Boot Prom Download via ZMODEM
RMON (Nine Groups)
High-Capacity RMON (64-bit counters)
Simple Network Time Protocol (SNTP)
Trace Route
Dynamic Egress
Inbound Rate Policing
Node and Alias Table
Enterasys Discovery Protocol (EDP)
Port-based MAC Locking
Access Control Lists

Network Management

NMS Console
NMS Policy Manager
NMS Inventory Manager
NMS Automated Security Manager

Specifications

Physical Specifications

Dimensions
46.43 cm (18.28") H x 6.05 cm (2.38") W x 29.51 cm (11.62") D

Weight
5.54 kg (12 lbs), gross shipping; 4.10 kg (9 lbs), net

Environmental Specifications

Operating Temperature
5° C to 40° C (41° F to 104° F)

Non-Operating Temperature
-30° C to 73° C (-22° F to 164° F)

Operating Humidity
5% to 90% RH, non-condensing

Power Consumption
100 to 125 VAC or 200 to 250 VAC; 50 to 60 Hz

Agency and Standards Specifications

Safety
UL160950, CSA 60950, EN 60825, EN 60950, IEC 60950

Electromagnetic Compatibility
47 CFR Parts 2 and 15, CSA C108.8, EN 55022, EN 55024, EN 61000-3-2, EN 61000-3-3, AS/NZS CISPR 22, VCCI V-3

IEEE Standards
IEEE 802.3
IEEE 802.1D
IEEE 802.1p
IEEE 802.1Q
IEEE 802.1w
IEEE 802.1s
IEEE 802.1X
IEEE 802.3ad

Power over Ethernet
IEEE 802.3af
Total PoE Power: 4,800 watts per chassis
(7.5 w) on all ports simultaneously
Support Class 1 (4 w), Class 2 (7.5 w) and Class 3 (15.4 w) PoE devices
Fully-loaded chassis will power Class 2 devices
Automated or manual PoE power distribution
Per-port enable/disable
Per-port power level
Per-port priority safety
Per-port overload and short-circuit protection
System power monitor

Ordering Information

Part Number	Description
Gold Distributed Forwarding Engines	
4H4282-49	Gold DFE with 48 10/100Base-TX ports via RJ45 and 1 Network Expansion Module (NEM) slot
4H4283-49	Gold DFE with 48 10/100Base-TX ports via RJ21 and 1 Network Expansion Module (NEM) slot
4H4285-49	Gold DFE with 48 10/100Base-TX PoE ports via RJ45 and 1 Network Expansion Module (NEM) slot
4H4284-49	Gold DFE with 48 100Base-FX ports via Multi-mode Fiber MTRJ and 1 Network Expansion Module (NEM) slot
4H4202-72	Gold DFE with 72 10/100Base-TX ports via RJ45
4H4203-72	Gold DFE with 72 10/100Base-TX ports via RJ21
4G4282-49	Gold DFE with 48 10/100/1000Base-T ports via RJ45 and 1 Network Expansion Module (NEM) slot
4G4285-49	Gold DFE with 48 10/100/1000Base-T PoE ports via RJ45 and 1 Network Expansion Module (NEM) slot
4G4202-72	Gold DFE with 72 10/100/1000Base-T ports via RJ45
4G4205-72	Gold DFE with 72 10/100/1000Base-T PoE ports via RJ45
Network Expansion Modules	
7G-6MGBIC-B	Network Expansion Module with 6 1000Base-X ports via mini- MGBIC, includes 100FX support
7K-2XFP-6MGBIC	Network Expansion Module with 6 1000Base-X ports via mini- MGBIC and 2 10GbE ports via XFP
7S-DSNSA7-01	N-Series Security Module for Intrusion Detection
7S-DSNSA7-01NPS	N-Series Security Module for Network Access Control (No PS)
WS-C20N-32	N-Series Wireless Controller Module
Mini-GBIC Modules	
MGBIC-LC01	1000Base-SX Mini-GBIC via LC Connector
MGBIC-LC03	1000Base-LX/LH (2 km Mini-GBIC) MMF via LC Connector
MGBIC-08	1000Base-LX/LH (70 km Long Haul) Mini-GBIC SMF via LC Connector
MGBIC-LC09	1000Base-LX Mini-GBIC via LC Connector
MGBIC-02	1000Base-T Mini-GBIC via RJ45 Connector
MGBIC-MT01	1000Base-SX Mini-GBIC via MTRJ Connector
MGBIC-N-LC04	100Base-FX (2 km) port Mini-GBIC via LC connector
MGBIC-N-LC05	100Base-FX (10 km) port Mini-GBIC via LC connector
XFP Modules	
10GBASE-ER-XFP	10GBase-ER, IEEE 802.3 SM, 1550 nm Long Wave Length, 40 km, LC XFP
10GBASE-LR-XFP	10GBase-LR, IEEE 802.3 SM, 1310 nm Long Wave Length, 10 km, LC XFP
10GBASE-SR-XFP	10GBase-SR, IEEE 802.3 MM, 850 nm Short Wave Length, 33/82 M, LC XFP
10GBASE-CX4-XFP	10GBase-CX4, IEEE 802.3 TwinAxial, Copper SFF-8470, 15 M, LC XFP
10GBASE-ZR-XFP	10GBase-ZR, SM, 1550 nm Long Wave Length, 80 km, LC XFP
Software	
N-EOS-L3	Enterasys Operating System Advanced Feature Package for N-Series Switches
N-EOS-RED	Enterasys Operating System (EOS) 1+1 High Availability Upgrade for N-Series Switches (with Gold DFE only)

Note:

1. *Gold Distributed Forwarding Engines (DFEs) are designed to work seamlessly with other Gold DFEs in the same chassis; however, they cannot be mixed with Platinum or Diamond DFEs in the same chassis.*
2. *By default, the Gold DFE does not provide high availability (system redundancy).To get 1+1 redundancy, the N-EOS-RED software license must be purchased and installed.*
3. *Basic EOS routing is included with each Gold DFE. EOS supports static routes and RIP.*
4. *Only one Advanced Routing Module (N-EOS-L3) is required per chassis (N3, N5, or N7).*
5. *The Advanced Routing Package (N-EOS-L3) includes OSPF, DVMRP, and PIM-SM.*

Warranty

As a customer-centric company, Enterasys is committed to providing quality products and solutions. In the event that one of our products fails due to a defect, we have developed a comprehensive warranty that protects you and provides a simple way to get your products repaired or media replaced as soon as possible.

The Enterasys N-Series comes with a one year hardware warranty. For full warranty terms and conditions please go to http://www.enterasys.com/support/warranty.aspx.

Service and Support

Enterasys Networks provides comprehensive service offerings that range from Professional Services to design, deploy and optimize customer networks, customized technical training, to service and support tailored to individual customer needs. Please contact your Enterasys account executive for more information about Enterasys Service and Support.

Contact Us

For more information, call Enterasys Networks toll free at 1-877-801-7082, or +1-978-684-1000 and visit us on the Web at enterasys.com

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Patented Innovation

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Delivering on our promises. On-time. On-budget.